

CLAIM AMENDMENTS

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

Claims 1-8 (cancelled).

Claim 9 (currently amended). A process for the synthetic generation of methane from a feed gas mixture, the process comprising the steps of:

providing a the feed gas mixture originating from a biomass gassification process, the feed gas mixture comprising including carbon monoxide, hydrogen, water vapor, ~~CO₂ C₂ components~~ and volatile aromatic hydrocarbons comprising ~~C₂ and higher, ; the feed gas further comprising unsaturated C₂ components and the aromatic hydrocarbons being in the range of 1 to less than 10 vol %;~~

~~contacting bringing the feed gas mixture, without a pretreatment in an activated carbon filter, into contact with a fluidized bed catalyst having catalyst particles, the particles comprising having a catalytic active component selected from the group consisting of including at least one of a metal, a metal compound and combinations or a mixture thereof under the conditions of; wherein the contacting occurs at:~~

an elevated temperature in the range of 250 to 450 500°C;

a feed gas pressure in the range of 0.8 to 70 bar;
a gas hourly space velocity of 1000 to 50000 h⁻¹; and
a concentration of H₂/CO in the initial gas mixture in the range of 0.25 to 5
when the feed gas is brought into contact with the fluidized bed catalyst.

Claim 10 (currently amended). The process according to claim 9, wherein the catalytic active component is selected from the group consisting of at least one of nickel, or a nickel compound and combinations thereof, and the catalytic active compound is disposed on a ceramic carrier.

Claim 11 (currently amended). The process according to claim 10, wherein the nickel compound catalytic active component is a mixture of nickel and nickel oxide.

Claim 12 (currently amended). The process according to claim 11, wherein the ceramic carrier is selected from the group consisting of Al₂O₃, TiO₂, SiO₂ or Y₂O₃ and combinations or mixtures thereof.

Claim 13 (currently amended). The process according to claim 9, wherein the content of the catalytically active component is in the range of 20 to 100 80 weight %, as compared to the weight of the catalyst particles.

Claim 14 (previously presented). The process according to claim 13, wherein the content of the catalytically active component is in the range of 40 to 60 weight %, as compared to the weight of the catalyst particles.

Claim 15 (currently amended). The process according to claim 9, wherein the size of the catalyst particles is in the range of 10 to 5000 1000 μm .

Claim 16 (currently amended). The process according to claim 15, wherein the size of the catalyst particles is in the range of 200 50 to 4000 500 μm .

Claim 17 (currently amended). The process according to claim 9, wherein the gas hourly space velocity is in the range of 2000 to 10000 h^{-1} , the temperature is in the range of 340 to 400 $^{\circ}\text{C}$ and the gas pressure is in the range of 4 0.8 to 10 bar.

Claim 18 (previously presented). The process according to claim 9, wherein a mean residence time of the feed gas mixture in the fluidized bed catalyst is in the range of 0.1 to 5 sec.

Claim 19 (previously presented). The process according to claim 18, wherein a mean residence time of the feed gas mixture in the fluidized bed catalyst is in the range of 0.2 to 1 sec.

Claim 20 (previously presented). The process according to claim 9, wherein the content of H_2/CO in the feed gas mixture is in the range of 0.8 to 2.

Claim 21 (currently amended). The process according to claim 9, wherein the feed gas mixture ~~is selected from the group consisting of:~~ further contains at least one of

benzene, toluene and/or naphthalene in the range of less than 5 vol % based on the overall volume of the feed gas.

Claim 22 (previously presented). The process according to claim 9, wherein the feed gas is in the range of 1 to 5 vol % based on the overall volume of the feed gas and the fluidized bed catalyst.

Claims 23-28 cancelled.